

AMENDMENTS TO CLAIMS - CLEAN VERSION

For the Examiner's convenience all pending claims are presented herein. Those claims that remain unchanged by this amendment are prefixed with "(Unchanged)".

1 1. (Once amended) A method of determining the current service level of a wireless communication device, the method comprising:
2 providing at least three distinct levels of service including a storing service mode,
3 a basic service mode, and a full service mode;
4 distinguishing between the storing service mode and the basic service mode based
5 upon one or more characteristics of a forward channel from a messaging system to the wireless communication device; and
6 distinguishing between the basic service mode and the full service mode based
7 upon one or more characteristics of a reverse channel from the wireless communication device to the messaging system.
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1 2. (Once amended) The method of claim 1, wherein new messages destined for the wireless communication device are stored by the messaging system while the wireless communication device is providing the storing service mode.
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1 3. (Once amended) The method of claim 2, wherein new messages destined for the wireless communication device are transmitted to the wireless communication device by the messaging system and stored messages that remain undelivered as a result of the wireless communication device providing the storing service mode remain undelivered while the wireless communication device is providing the basic service mode.

1 4. (Once amended) The method of claim 3, wherein both new messages and stored
2 messages are transmitted to the wireless communication device by the messaging
3 system while the wireless communication device is providing the full service
4 mode.

1 5. (Unchanged) The method of claim 1, wherein the one or more characteristics of
2 the forward channel includes the forward channel's signal quality.

1 6. (Once amended) The method of claim 5 further including generating a signal
2 quality metric representative of the forward channel's signal quality over a
3 predetermined period of time.

1 7. (Once amended) The method of claim 1, wherein the one or more characteristics
2 of the forward channel includes a status.

1 8. (Once amended) The method of claim 7, wherein the status represents a value
2 from one of a plurality of states, the method further including associating each of
3 the plurality of states with a weight.

1 9. (Once amended) The method of claim 8, wherein the plurality of states includes:
2 no signal;
3 synchronization error;
4 frame error; and
5 good frame.

1 10. (Once amended) The method of claim 8 further including generating a signal
2 quality metric representative of the forward channel's signal quality over a
3 predetermined period of time based upon weighted values of the status over the
4 predetermined period of time.

1 11. (Unchanged) The method of claim 1, wherein verification of the reverse channel
2 is achieved upon receipt of an acknowledgment from the messaging system on the
3 forward channel corresponding to a message transmitted to the messaging system
4 on the reverse channel.

1 12. (Once amended) A method of transitioning between service modes and indicating
2 a current service mode to a user of a wireless communication device, the method
3 comprising:
4 determining a status of a signal associated with a forward channel from a
5 messaging system to the wireless communication device;
6 determining a quality metric based upon the status over a predetermined period of
7 time;
8 providing at least a full service mode, a basic service mode, and a storing service
9 mode;
10 if the current service mode is the storing service mode, transitioning to the basic
11 service mode after determining the quality metric is better than a first
12 predetermined threshold;

13 if the current service mode is the basic service mode, transitioning to the full
14 service mode after verification of a reverse channel from the wireless
15 communication device to the messaging system; and
16 if the current service mode is the full service mode, transitioning to the basic
17 service mode after determining the reverse channel has become degraded.

1 13. (Once amended) The method of claim 12 further comprising providing an
2 indication of the current service mode to the user.

1 14. (Once amended) The method of claim 12 further comprising:
2 determining an initial value for the current service mode by:
3 inspecting the signal for synchronization information,
4 initializing the current service mode to the storing service mode if no
5 synchronization information is found, and
6 initializing the current service mode to the basic service mode if
7 synchronization information is found.

1 15. (Once amended) The method of claim 12 further comprising:
2 in the basic service mode, transitioning to the storing service mode after the status
3 indicates the wireless communication device is out of range;
4 in the full service mode, transitioning to the basic service mode after determining
5 the quality metric is worse than a second predetermined threshold; and
6 in the full service mode, transitioning to the storing service mode after the status
7 indicates the wireless communication device is out of range.

1 16. (Once amended) The method of claim 12, wherein the storing service mode
2 includes a first storing state and a second storing state, and wherein the basic
3 service mode includes a first basic state, a second basic state, and a third basic
4 state, the method further comprising:
5 in the first storing state, re-initializing a service quality monitoring process after
6 the status indicates a good frame has been detected on the forward
7 channel;
8 in the second storing state, beginning a registration process after the status
9 indicates a ping has been received from the messaging system on the
10 forward channel;
11 in the first basic state, transitioning to the second basic state after determining the
12 quality metric is better than a third predetermined threshold;
13 in the second basic state, transitioning to the third basic state after determining the
14 quality metric is worse than the second predetermined threshold; and
15 in the third basic state, transitioning to the second basic state after determining the
16 quality metric is better than the third predetermined threshold.

1 17. (Unchanged) The method of claim 16, wherein the first, second, and third
2 predetermined thresholds are programmable parameters.

1 18. (Unchanged) The method of claim 12, wherein new messages destined for the
2 wireless communication device are not received by the wireless communication
3 device while the wireless communication device is in the storing service mode,
4 wherein new messages destined for the wireless communication device are

5 received by the wireless communication device and stored messages that remain
6 undelivered as a result of the wireless communication device having been in the
7 storing service mode remain undelivered while the wireless communication
8 device is in the basic service mode, and wherein both new messages and stored
9 messages are received by the wireless communication device while the wireless
10 communication device is in the full service mode.

1 19. (Once amended) The method of claim 12 further including determining whether
2 or not to attempt registering with the messaging system based upon the current
3 service mode.

1 20. (Once amended) The method of claim 12 further including periodically
2 evaluating the quality metric.

1 21. (Once amended) A method of registering a wireless communication device with a
2 messaging system, the method comprising:
3 providing a current service mode in one of a plurality of states including:
4 a storing service mode in which new messages destined for the wireless
5 communication device are not received by the wireless
6 communication device,
7 a basic service mode in which new messages destined for the wireless
8 communication device are received by the wireless communication
9 device and stored messages that remain undelivered as a result of
10 the wireless communication device having been in the storing

1 22. (Once amended) The method of claim 21 further including:
2 the registration process transmitting one or more registration messages to the
3 messaging system during the basic service mode; and
4 the registration process transmitting no registration messages to the messaging
5 system during the full service mode and the storing service mode.

1 23. (Once amended) The method of claim 21 further including:
2 determining a status of a signal associated with a forward channel from a
3 messaging system to the wireless communication device;
4 determining a quality metric based upon the status over a predetermined period of
5 time;
6 if the current service mode is the storing service mode, transitioning to the basic
7 service mode after determining the quality metric is better than a first
8 predetermined threshold;
9 if the current service mode is the basic service mode, transitioning to the full
10 service mode after verification of a reverse channel from the wireless
11 communication device to the messaging system; and

12 if the current service mode is the full service mode, transitioning to the basic
13 service mode after determining the reverse channel has become degraded.

1 24. (Once amended) The method of claim 23 further including:
2 determining an initial value for the current service mode by
3 inspecting the signal for synchronization information,
4 initializing the current service mode to the storing service mode if no
5 synchronization information is found, and
6 initializing the current service mode to the basic service mode if
7 synchronization information is found.

1 25. (Once amended) The method of claim 23 further including:
2 in the basic service mode, transitioning to the storing service mode after the status
3 indicates the wireless communication device is out of range;
4 in the full service mode, transitioning to the basic service mode after determining
5 the quality metric is worse than a second predetermined threshold; and
6 in the full service mode, transitioning to the storing service mode after the status
7 indicates the wireless communication device is out of range.

1 26. (Unchanged) A wireless communication device comprising:
2 a storage device having stored therein a service mode determination routine for
3 providing a plurality of service modes including a full service mode, a
4 basic service mode and a storing service mode;
5 a processor coupled to the storage device to execute the service mode
6 determination routine to evaluate a quality metric associated with a

7 forward channel from a messaging system and identify a current service
8 mode from the plurality of service modes, where:
9 the quality metric is generated based upon a status of a signal associated
10 with the forward channel;
11 the current service mode is updated to the basic service mode from the
12 storing service mode if the quality metric is better than a first
13 predetermined threshold;
14 the current service mode is updated to the full service mode from the basic
15 service mode after verifying a reverse channel from the wireless
16 communication device to the messaging system;
17 the current service mode is updated to the basic service mode from the full
18 service mode after determining the reverse channel has become
19 degraded.

1 27. (Unchanged) The wireless communication device of claim 26, wherein new
2 messages destined for the wireless communication device are not received by the
3 wireless communication device while the wireless communication device is in the
4 storing service mode, wherein new messages destined for the wireless
5 communication device are received by the wireless communication device and
6 stored messages that remain undelivered as a result of the wireless
7 communication device having been in the storing service mode remain
8 undelivered while the wireless communication device is in the basic service
9 mode, and wherein both new messages and stored messages are received by the

10 wireless communication device while the wireless communication device is in the
11 full service mode.

1 28. (Unchanged) The wireless communication device of claim 27 wherein:
2 the current service mode is updated to the storing service mode from the basic
3 service mode after the status indicates the wireless communication device
4 is out of range;
5 the current service mode is updated to the basic service mode from the full service
6 mode after determining the quality metric is worse than a second
7 predetermined threshold; and
8 the current service mode is updated to the storing service from the full service
9 mode after the status indicates the wireless communication device is out of
10 range.

1 29. (Unchanged) A wireless communication device comprising:
2 a storage device having stored therein a registration routine that determines
3 registration processing based upon a current service mode;
4 a processor coupled to the storage device to execute the registration routine to
5 transmit zero or more registration messages to a messaging system based
6 upon the current service mode, where:
7 a storing service mode is provided in which new messages destined for the
8 wireless communication device are not received by the wireless
9 communication device;
10 a basic service mode is provided in which new messages destined for the
11 wireless communication device are received by the wireless

12 communication device and stored messages that remain
13 undelivered as a result of the wireless communication device
14 having been in the storing service mode remain undelivered while
15 the wireless communication device is in the basic service mode;
16 a full service mode is provided in which both new messages and stored
17 messages are received by the wireless communication device;
18 one or more registration messages are transmitted to the messaging system
19 while the current service mode is the basic service mode; and
20 no registration messages are transmitted to the messaging system while the
21 current service mode is the full service mode or the storing service
22 mode.

1 30. (New) A method comprising:

2 determining a status of a forward channel signal from a messaging system to a
3 wireless communication device;
4 determining a quality metric based upon the status of the forward channel signal
5 over a predetermined period of time;
6 providing at least a full service mode, a basic service mode, and a storing service
7 mode, wherein:
8 the storing service mode comprises at least a first storing state and a
9 second storing state, and
10 the basic service mode comprises at least a first basic state, a second basic
11 state, and a third basic state;

12 if the current service mode is the storing service mode, transitioning to the basic
13 service mode after determining the quality metric is better than a first
14 predetermined threshold;
15 if the current service mode is the basic service mode, transitioning to the full
16 service mode after verification of a reverse channel from the wireless
17 communication device to the messaging system; and
18 if the current service mode is the full service mode, transitioning to the basic
19 service mode after determining the reverse channel has become degraded
20 or if the quality metric is worse than a second predetermined threshold.

1 31. (New) The method of claim 30, wherein the first basic state is a state in which the
2 wireless communication device is barely in range, the second basic state is a state
3 in which the forward channel signal is of good quality and the reverse
4 channel is not verified, and the third basic state is a state in which the forward
5 channel reception is breaking up.

1 32. (New) The method of claim 30, wherein the first storing state is a state in which
2 the wireless communication device is out of range and the second storing state is a
3 state in which the wireless communication device is almost out of range.

1 33. (New) The method of claim 30, further comprising transitioning to the first
2 storing state from any other mode after receiving an out of range status from a
3 forward channel monitoring logic.

1 34. (New) The method of claim 30, further comprising transitioning from the first
2 basic state to the second basic state if the quality metric is better than a third
3 predetermined threshold.

1 35. (New) The method of claim 34, further comprising transitioning from the first
2 basic state or the third basic state to the second storing state if the quality metric is
3 worse than a fourth predetermined threshold.

1 36. (New) The method of claim 30, further comprising transitioning from the second
2 basic state to the third basic state if the quality metric is worse than the second
3 predetermined threshold.

1 37. (New) The method of claim 30, wherein the first basic state is the initial state on
2 reset if a synchronization signal is found on the forward channel.

1 38. (New) The method of claim 30, wherein the first storing state is the initial state
2 on reset if a synchronization signal is not found on the forward channel.